data (MISD) multiprocessing, and multiple-instruction multiple-data (MIMD) multiprocessing.

[0091] The methods illustrated in FIGS. **1-7** that perform the operations described herein with respect to FIGS. **1-7** are performed by computing hardware, for example, by one or more processors or computers, as described above executing instructions or software to perform the operations described herein.

[0092] Instructions or software to control a processor or computer to implement the hardware components and perform the methods as described above are written as computer programs, code segments, instructions or any combination thereof, for individually or collectively instructing or configuring the processor or computer to operate as a machine or special-purpose computer to perform the operations performed by the hardware components and the methods as described above. In one example, the instructions or software include machine code that is directly executed by the processor or computer, such as machine code produced by a compiler. In another example, the instructions or software include higher-level code that is executed by the processor or computer using an interpreter. Programmers of ordinary skill in the art can readily write the instructions or software based on the block diagrams and the flow charts illustrated in the drawings and the corresponding descriptions in the specification, which disclose algorithms for performing the operations performed by the hardware components and the methods as described above.

[0093] The instructions or software to control a processor or computer to implement the hardware components and perform the methods as described above, and any associated data, data files, and data structures, are recorded, stored, or fixed in or on one or more non-transitory computer-readable storage media. Examples of a non-transitory computer-readable storage medium include read-only memory (ROM), random-access memory (RAM), flash memory, CD-ROMs, CD-Rs, CD+Rs, CD-RWs, CD+RWs, DVD-ROMs, DVD-Rs, DVD+Rs, DVD-RWs, DVD+RWs, DVD-RAMs, BD-ROMs, BD-Rs, BD-R LTHs, BD-REs, magnetic tapes, floppy disks, magneto-optical data storage devices, optical data storage devices, hard disks, solid-state disks, and any device known to one of ordinary skill in the art that is capable of storing the instructions or software and any associated data, data files, and data structures in a non-transitory manner and providing the instructions or software and any associated data, data files, and data structures to a processor or computer so that the processor or computer can execute the instructions. In one example, the instructions or software and any associated data, data files, and data structures are distributed over network-coupled computer systems so that the instructions and software and any associated data, data files, and data structures are stored, accessed, and executed in a distributed fashion by the processor or computer.

[0094] While this disclosure includes specific examples, it will be apparent to one of ordinary skill in the art that various changes in form and details may be made in these examples without departing from the spirit and scope of the claims and their equivalents. The examples described herein are to be considered in a descriptive sense only, and not for purposes of limitation. Descriptions of features or aspects in each example are to be considered as being applicable to similar features or aspects in other examples. Suitable results may be achieved if the described techniques are performed in a different order, and/or if components in a described system, architecture, device, or circuit are combined in a different manner, and/or replaced or supplemented by other components or their equivalents. Therefore, the scope of the disclosure is defined not by the detailed description, but by the claims and their equivalents, and all variations within the scope of the claims and their equivalents are to be construed as being included in the disclosure.

What is claimed is:

1. An apparatus for determining a translation word, the apparatus comprising:

a word vector generator configured to generate a word vector corresponding to an input word of a first language with reference to a first word vector space that is related to the first language;

a word vector determiner configured to determine a word vector of a second language, wherein the determined word vector of the second language corresponds to the generated word vector, using a matching model; and

a translation word selector configured to select a translation word of the second language, wherein the selected translation word corresponds to the input word of the first language, based on the determined word vector of the second language.

2. The apparatus of claim **1**, wherein the apparatus further comprises a word inputter configured to receive the input word of the first language.

3. The apparatus of claim **1**, wherein the translation word selector is configured to:

select a word vector, wherein the selected word vector is the most similar to the determined word vector of the second language, from among word vectors on a second word vector space that is related to the second language; and

select, as the translation word, a word of the second language, wherein the word of the second language corresponds to the selected word vector.

4. The apparatus of claim **3**, wherein the translation word selector is configured to select the word vector, wherein the selected word vector is the most similar to the determined word vector of the second language, from among the word vectors on the second word vector space by using at least one of a distance measurement function, a similarity measurement function, or a correlation coefficient.

5. The apparatus of claim **4**, wherein the distance measurement function is one of Euclidean distance, Mahalanobis distance, or Hamming distance;

the similarity measurement function is cosine similarity; and

the correlation coefficient is one of Pearson correlation coefficient, Spearman correlation coefficient, partial correlation coefficient, or Cronbach's alpha.

6. The apparatus of claim **3**, wherein the first word vector space is built in advance through using machine learning using a first language corpus; and

the second word vector space is built in advance using machine learning using a second language corpus.

7. The apparatus of claim **6**, wherein the first word vector space is built by generating word vectors for each word of the first language and mapping the generated word vectors for each word of the first language to the vector space of the first language, and wherein the second word vector space is built by generating word vectors for each word of the second